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09/669, 899 09/27/00 ENDO

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| EXAMINER | |
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005514 IM52/0911
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SHOSHIO, C
ART UNIT PAPER NUMBER

1714
DATE MAILED:

09/11/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

| | |
|--------------------------------------|------------------------------------|
| Application No. 09/669,899 | Applicant(s) Endo et al. |
| Examiner Callie Shosho | Art Unit 1714 |



— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on _____

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle* 35 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-15 is/are pending in the application

4a) Of the above, claim(s) _____ is/are withdrawn from consideration

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-15 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claims _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are objected to by the Examiner.

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) All b) Some* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) Notice of References Cited (PTO-892)

18) Interview Summary (PTO-413) Paper No(s). _____

16) Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) Notice of Informal Patent Application (PTO-152)

17) Information Disclosure Statement(s) (PTO-1449) Paper No(s). 5-6

20) Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 11 each recite that the “colorant is dispersed in a monomolecular state in the film-forming resin”. The scope of the claim is confusing because it is no clear what is meant by “dispersed in a monomolecular state”. Is the colorant encapsulated by the film-forming resin, is the film-forming resin produced by polymerizing in the presence of the colorant, is the colorant simply dispersed by the film-forming resin, etc? Clarification is requested.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claims 1, 5-11, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 732381.

EP 732381 disclose an aqueous ink jet ink comprising colored resin wherein the colored resin comprises a film-forming resin, i.e. polyurethane, and colorant which is fundamentally contained within the resin, i.e. dispersed in a monomolecular state. Further, it is disclosed that the colorant, i.e. dye or pigment, is contained in the film-forming resin by the aid of a solubilizer. It is further disclosed that the above ink is contained in an ink jet printer which deposits ink on recording medium (page 3, line 56-page 4, line 2, page 4, lines 40-41, page 8, lines 16-28 and 33-37, page 10, lines 31-34, and page 13, lines 1-6). Although there is no explicit disclosure of an ink container, ink cartridge, or ink jet head, it is clear that the ink jet printer inherently possesses these components in order to store and print the ink.

In light of the above, it is clear that EP 732381 anticipates the present claims.

5. Claims 1-4, 6, and 11-15 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 130789.

EP 130789 disclose an aqueous ink jet ink comprising colored polymer wherein the colored polymer comprises a film-forming polymer and dye and wherein the polymer is

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polymerized in the presence of the colorant, i.e. colorant is dispersed in a monomolecular state in the polymer. It is disclosed that the film-forming polymer has minimum film-forming temperature not higher than 35° C (page 4, lines 4-11, page 5, lines 21-28, page 8, lines 10-22, page 11, lines 17-28, page 12, line 31-page 13, line 26, and page 16, line 27).

In light of the above, it is clear that EP 130789 anticipates the present claims.

6. Claims 1, 6-11, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Banning et al. (U.S. 5,700,851).

Banning et al. disclose an aqueous ink jet ink comprising colored resin wherein the colored resin comprises a film-forming resin, i.e. polyurethane, and colorant wherein the resin is polymerized in the presence of the colorant, i.e. colorant is dispersed in a monomolecular state in the resin. It is further disclosed that the above ink is contained in an ink jet printer which deposits ink on recording medium and comprises ink jet cartridge and ink jet head (col.2, lines 4-65, col.3, lines 58-64, col.5, lines 47-54, and col.7, lines 37-45). Although there is no explicit disclosure of an ink container, it is clear that the ink jet printer inherently possesses an ink container to store the ink.

In light of the above, it is clear that Banning et al. anticipates the present claims.

7. Claims 1, 5, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Micale (U.S. 4,665,107).

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Micale discloses an aqueous ink comprising pigment encapsulated with a film-forming polymer, i.e. colorant is dispersed in a monomolecular state in the polymer. Further, it is disclosed that the pigment is encapsulated in the film-forming polymer by the aid of a solubilizer (col.2, lines 59-64, col.3, lines 13-18, and col.4, lines 5-11 and 28-30).

In light of the above, it is clear that Micale anticipates the present claims.

8. Claims 1, 5-11, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Hodge (U.S. 5,985,988).

Hodge discloses an aqueous ink jet ink comprising colored resin wherein the colored resin comprises a film-forming resin, i.e. polyester, and colorant which is dispersed in a monomolecular state in the resin. Further, it is disclosed that the colorant, i.e. dye, is contained in the film-forming resin by the aid of a solubilizer, i.e. surfactant. It is further disclosed that the above ink is contained in an ink jet printer which deposits ink on recording medium (col.6, lines 48-64, col.7, lines 1-16, and col.12, lines 8-12). Although there is no explicit disclosure of an ink container, ink cartridge, or ink jet head, it is clear that the ink jet printer inherently possesses these components in order to store and print the ink.

In light of the above, it is clear that Hodge anticipates the present claims.

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Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

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11. Claims 2-4 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 732381 or Banning et al. (U.S. 5,700,851) either of which in view of either JP 11228655 or EP 130789.

The disclosures with respect to EP 732381 and Banning et al. in paragraphs 4 and 6, respectively, are incorporated here by reference.

The difference between either EP 732381 or Banning et al. and the present claimed invention is the requirement in the claims of minimum film-forming temperature.

While both EP 732381 and Banning et al. disclose the use of film-forming polyurethane polymers, there is no explicit disclosure in either of the minimum film-forming temperature of the polyurethane.

JP 11228655, which is drawn to aqueous ink, disclose the use of polyurethane which has minimum film-forming temperature of 35⁰ C or less in order to produce an ink with good adhesion and printability.

Alternatively, EP 130789, which is drawn to ink jet ink, disclose the use of a colored polymer which has film-forming temperature less than 35⁰ C in order to produce an ink with excellent water resistance which produces a continuous film (page 19, lines 10-15 and col.17, lines 15-29).

In light of the motivation for using polymer with specific minimum film-forming temperature disclosed by either JP 11228655 or EP 130789 as described above, it therefore would have been obvious to one of ordinary skill in the art to control the minimum film-forming

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temperature of the polyurethane of either EP 732381 or Banning et al. in order to produce an ink with good adhesion and printability, or alternatively, excellent water resistance, and thereby arrive at the claimed invention.

12. Claims 2-4 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Micale (U.S. 4,665,107) or Hodge (U.S. 5,985,988) either of which in view of EP 130789.

The disclosures with respect to Micale and Hodge in paragraphs 7 and 8, respectively, are incorporated here by reference.

The difference between either Micale or Hodge and the present claimed invention is the requirement in the claims of minimum film-forming temperature.

While both Micale and Hodge disclose the use of film-forming resin, there is no explicit disclosure of the minimum film-forming temperature.

EP 130789, which is drawn to ink jet ink, disclose the use of a colored polymer which has film-forming temperature less than 35° C in order to produce an ink with excellent water resistance which produces a continuous film (page 19, lines 10-15 and col.17, lines 15-29).

In light of the motivation for using polymer with specific minimum film-forming temperature disclosed by EP 130789 as described above, it therefore would have been obvious to one of ordinary skill in the art to control the minimum film-forming temperature of the resin in either Micale or Hodge in order to produce an ink with excellent water resistance, and thereby arrive at the claimed invention.

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13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Halle-Goulle et al. (U.S. 6,274,728) discloses a thermoplastic resin colored with a chromophore which comprises solubilizing groups, however, there is no disclosure that the resin is film-forming.

Harris et al. (U.S. 5,973,062) disclose a gravure ink comprising a colored polyurethane.

Hayashi et al. (U.S. 5,827,911) disclose a thermoplastic resin colored with a black dye which is reacted with an anionic surfactant, however, there is no disclosure that the resin is film-forming.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie Shosho whose telephone number is (703) 305-0208. The examiner can normally be reached on Mondays-Thursdays from 7:00 am to 4:30 pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on (703) 306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Cl.
Callie Shosho

9/7/01

Vas Jagannathan
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